

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A method for detecting a target nucleic acid molecule in a sample, said method comprising:

providing a sample containing at least one molecule of a target nucleic acid and constituents for enabling amplification of the target nucleic acid molecule;

loading the sample into a sample chamber comprising a flow through channel, said sample chamber including a device for retaining a reaction product of amplification of the target nucleic acid;

subjecting the sample in said sample chamber to a homogeneous amplification assay comprising at least a first round of amplification under conditions such that amplification of said target nucleic acid occurs and a reaction product of the amplification of a single molecule of the target nucleic acid comprises a clonal amplified product having a detectable concentration within a portion of said sample chamber after [[said]] a single round of amplification; and

detecting the clonal amplified product of said target nucleic acid after said single first round of amplification.

2. (Currently Amended) A method for detecting a target nucleic acid molecule in a sample, said method comprising:

providing a sample containing at least one molecule of a target nucleic acid and constituents for enabling amplification of the target nucleic acid molecule;

loading the sample into a sample chamber comprising a flow through channel, said sample chamber including means for retaining a reaction product of amplification of the target nucleic acid;

subjecting the sample to a homogeneous amplification assay comprising at least a first round of amplification under conditions such that amplification of said target nucleic acid occurs and a reaction product of the amplification of a single molecule of the target nucleic acid comprises a clonal amplified product having a detectable concentration within a portion of said sample chamber after ~~[[said]]~~ a single round of amplification; and

detecting the clonal amplified product of said target nucleic acid after said ~~single~~ first round of amplification.

3. (Currently Amended) A method for detecting a target nucleic acid molecule in a sample, said method comprising:

loading a sample into a sample chamber comprising a flow through channel, said sample chamber comprising constituents for enabling amplification of a target nucleic acid, said sample chamber including a device for retaining a reaction product of amplification of the target nucleic acid;

subjecting the sample in said sample chamber to a homogeneous amplification assay comprising at least a first round of amplification under conditions such that amplification of said target nucleic acid occurs and a reaction product of the amplification of a single molecule of the target nucleic acid comprises a clonal amplified product having a detectable concentration within a portion of said sample chamber after ~~[[said]]~~ a single round of amplification; and

detecting the clonal amplified product of said target nucleic acid after said first ~~single~~ round of amplification.

4. (Currently Amended) A method for detecting a target nucleic acid molecule in a sample, said method comprising:

loading a sample into a sample chamber comprising a flow through channel, said sample chamber comprising constituents for enabling amplification of a target nucleic acid, said sample chamber including means for retaining a reaction product of amplification of the target nucleic acid;

subjecting the sample to a homogeneous amplification assay comprising at least a first round of amplification under conditions such that amplification of said target nucleic acid occurs and a reaction product of the amplification of a single molecule of the target nucleic acid comprises a clonal amplified product having a detectable concentration within a portion of said sample chamber after ~~[[said]]~~ a single round of amplification; and

detecting the clonal amplified product of said target nucleic acid after said single first round of amplification.

5-139. (Canceled)

140. (Previously presented) A method as recited in claim 1, wherein said sample has a volume of about 1 picoliter or less.

141-142. (Canceled)

143. (Previously presented) A method as recited in claim 1, wherein said sample has a volume of about 1 nanoliter or less.

144. (Previously presented) A method as recited in claim 1, wherein said sample has a volume of about 10 nanoliters or less.

145. (Previously presented) A method as recited in claim 1, wherein said sample has a volume of about 100 nanoliters or less.

146. (Previously presented) A method as recited in claim 1, wherein said sample has a volume of about 1 microliter or less.

147-150. (Canceled)

151. (Previously presented) A method as recited in claim 1, wherein said sample has a volume which is nanoliter-sized.

152. (Previously presented) A method as recited in claim 2, wherein said sample has a volume of about 1 picoliter or less.

153. (Previously presented) A method as recited in claim 2, wherein said sample has a volume of about 1 nanoliter or less.

154. (Previously presented) A method as recited in claim 2, wherein said sample has a volume of about 10 nanoliters or less.

155. (Previously presented) A method as recited in claim 2, wherein said sample has a volume of about 100 nanoliters or less.

156. (Previously presented) A method as recited in claim 2, wherein said sample has a volume of about 1 microliter or less.

157. (Previously presented) A method as recited in claim 2, wherein said sample chamber is confined in at least one dimension by opposing barriers separated by a dimension of about 100 microns or less.

158. (Previously presented) A method as recited in claim 2, wherein said sample chamber is confined in at least one dimension by opposing barriers separated by a dimension of about 500 microns or less.

159. (Previously presented) A method as recited in claim 2, wherein said sample chamber is positioned in a device which comprises a plurality of sample chambers.

160. (Canceled)

161. (Previously presented) A method as recited in claim 3, wherein said sample has a volume of about 1 picoliter or less.

162. (Previously presented) A method as recited in claim 3, wherein said sample has a volume of about 1 nanoliter or less.

163. (Previously presented) A method as recited in claim 3, wherein said sample has a volume of about 10 nanoliters or less.

164. (Previously presented) A method as recited in claim 3, wherein said sample has a volume of about 100 nanoliters or less.

165. (Previously presented) A method as recited in claim 3, wherein said sample has a volume of about 1 microliter or less.

166. (Previously presented) A method as recited in claim 3, wherein said sample chamber is confined in at least one dimension by opposing barriers separated by a dimension of about 100 microns or less.

167. (Previously presented) A method as recited in claim 3, wherein said sample chamber is confined in at least one dimension by opposing barriers separated by a dimension of about 500 microns or less.

168. (Previously presented) A method as recited in claim 3, wherein said sample chamber is positioned in a device which comprises a plurality of sample chambers.

169. (Canceled)

170. (Previously presented) A method as recited in claim 4, wherein said sample has a volume of about 1 picoliter or less.

171. (Previously presented) A method as recited in claim 4, wherein said sample has a volume of about 1 nanoliter or less.

172. (Previously presented) A method as recited in claim 4, wherein said sample has a volume of about 10 nanoliters or less.

173. (Previously presented) A method as recited in claim 4, wherein said sample has a volume of about 100 nanoliters or less.

174. (Previously presented) A method as recited in claim 4, wherein said sample has a volume of about 1 microliter or less.

175. (Previously presented) A method as recited in claim 4, wherein said sample chamber is confined in at least one dimension by opposing barriers separated by a dimension of about 100 microns or less.

176. (Previously presented) A method as recited in claim 4, wherein said sample chamber is confined in at least one dimension by opposing barriers separated by a dimension of about 500 microns or less.

177. (Previously presented) A method as recited in claim 4, wherein said sample chamber is positioned in a device which comprises a plurality of sample chambers.

178-214. (Canceled)

215. (Currently Amended) A method for detecting a target nucleic acid molecule in a sample, said method comprising:

loading a sample into a sample chamber comprising a flow through channel, said sample chamber further comprising constituents for cloning a segment of DNA, said sample chamber including a device for retaining a reaction product from cloning the segment of DNA;

subjecting the sample in said sample chamber to a homogeneous amplification assay comprising at least a first round of amplification under conditions such that amplification of said segment of DNA occurs and a reaction product of the amplification of a single molecule of the target nucleic acid comprises the cloned DNA segment product having a detectable concentration within a portion of said sample chamber after ~~[[said]]~~ a single round of amplification; and

detecting the cloned DNA segment after said ~~single~~ first round of amplification.